USDA Natural Resources Conservation Service – Minnesota State Technical Committee, Forestry Subcommittee

Short-Term Recommendations for Forest Establishment and Management in Prairie-Dominated Ecosystems

Summary:

The USDA Natural Resources Conservation Service (NRCS) and Soil and Water Conservation Service (SWCD) implement many Farm Bill Programs that include cost-share practices designed to create and improve forest cover. In particular, the EQIP program provides $1 million per year for at least the next two years for forestry practices statewide. This is an effort to provide the NRCS and SWCD with recommendations on where forest restoration is appropriate in western Minnesota prairie landscapes, where it is not appropriate, and to provide site-level guidelines for forest management and restoration activities.

This is not an attempt to influence savanna management, which is considered a form of prairie rather than a form of forest. It is also not an attempt to influence other tree planting for purposes of erosion control, wind abatement, snow management, etc.

Background:

The prairie region of Minnesota is dominated by agricultural land use, primarily row crop production. Much of the native habitat – prairie and forest - have been converted to intensive land uses such as cropping, towns and roads. Conservation professionals have worked to preserve and restore native ecosystem values and functions on the most sensitive or least valuable lands in the region. Because of the near obliteration of native grasslands many associated species are rare, threatened or endangered. Therefore prairie preservation and restoration is a very high conservation priority.

However, there have been professional disagreements and public debates over prairie restoration practices in western Minnesota. that removetree cover from public lands at the same time as other efforts to create forest cover for wildlife in the same area. Some of the confusion is because there are seemingly contradictory plans in place that provide landscape management guidance in this region.

The Minnesota Prairie Plan Working Group, comprised of representatives of government agencies and non-profit organizations interested in prairie management, developed the "*Minnesota Prairie Conservation Plan 2010: A habitat plan for native prairie, grassland, and wetlands in the Prairie Region of western Minnesota*" (Appendix A). The Prairie Plan provides

a 25-year vision for accelerated prairie conservation, and maps the remaining functional prairies. The plan defines core prairie areas as well as connecting corridors as priority focus areas. It also provides broad recommendations for grassland conservation across the landscape in the agricultural matrix. . It also identifies one of the "Threats to Prairie Systems in Minnesota" as "Woody Plant Encroachment". This section details how trees on the prairie would be naturally limited by wildfires, and how their presence now provides habitat for animals that prey on prairie animal species and how unchecked such encroachment leads to the long term conversion of grassland habitats to forest habitats. A wide range of tree planting efforts over the past 150 years have also introduced significant woody cover that is not associated with pre-settlement vegetation patterns. Tree plantings have been pursued for a variety of reasons, such as protecting farmsteads and communities from wind, reducing soil erosion and providing for specific wildlife management goals.

While there is no similar plan for restoring forests that were historically present in southern and western Minnesota's prairies, it is generally well recognized and accepted that there were savannas, groves and even forested areas in the prairie landscape. Some of these occurred in the fire shadow of larger lakes and along major rivers systems and their tributaries. The Minnesota Forest Resources Council and the Minnesota Forest Resources Partnership attempted to document these areas as part of the *25-Year Vision for Lessard-Sams Outdoor Heritage Council (L-SOHC) Investments in Minnesota Forests* (Appendix B). They developed a low resolution map of formerly forested areas suitable for reforestation using widely-accepted maps of pre-settlement vegetation, as well as local knowledge of the landscape. This map shows that many riparian areas in western Minnesota historically sustained natural forests, within a matrix of prairie and savanna.

These visions are not mutually exclusive, but there is, to some extent, competition between tree planting and grassland conservation on the limited land base that is set-a-side for conservation purposes. Care is needed to ensure that site level conservation efforts support landscape level needs and priorities. Towards that end we merged the GIS layers from these two documents to identify those areas on the landscape where there was no overlap in seemingly conflicting goals, in order to focus on-the-ground forest management and restoration where it was clear that doing so would be in accord with prairie conservation measures. The mapping did show some areas where there are opportunities to focus entirely on forest or grassland habitats, but they also showed a significant overlap. In these areas the maps are too coarse to resolve site level conservation choices.

<u>Landscape-Scale Recommendations:</u>

Prairie and surrogate grassland conservation is a high priority landscape goal. Minnesota's native grasslands have borne the brunt of agricultural development, but native forests in the region are nearly as rare as prairies. We recommend that NRCS and SWCD field staff refer to the attached map of historically forested areas that do not conflict with existing prairie management plans

(Appendix C). Keep in mind that this map is very coarse and its intent is to identify those broad areas that historically sustained natural forests. It is also recommended that limited EQIP funds be prioritized for management (TSI) and invasive species control with forestation a lower priority in the prairie region of the state.

If landowners requesting forest management assistance and cost-share fall within the forest restoration areas detailed on this map they should be given further consideration, and encouraged to perform forest management activities. However, if landowners fall within the areas resource managers need to carefully review site level guidelines and evaluate the context and appropriateness of tree planting. , with the possible exception of savanna restoration where appropriate.

We recommend that staff reference the Site-Level Recommendations once a property has been identified as falling within a forest restoration area or if landowners are expressing interest in tree planting in the broader agricultural matrix of the prairie region.

Site-Level Recommendations

- Slope and Proximity to Water: Prairie wildfires spared woody vegetation due to changes in slope and inability to cross water bodies.
    - Actual distance to the water's edge is less important than physiographic characteristics. Along large rivers it may be appropriate to have forests from blufftop to blufftop. But even within that zone there may be flatter or drier areas that are very conducive to prairie conservation.
    - It may be appropriate to restore forests on the east side of larger water bodies than on the west side of smaller ones.
    - It may be appropriate to plant trees on steeper or bluff slopes than on level ground or gentle slopes to the water.
    - Gullies and ravines often had trees growing in them.
    - Floodplains were often forested, and are more easily managed for trees than for prairie.
    - It is not appropriate to plant trees on functional "goat prairies" – southern and western facing prairies on steep slopes. In fact, efforts should be made to clear these of invading woody vegetation like red cedar, sumac, buckthorn, etc.
- Current Land Cover:
    - It may be appropriate to promote trees where there are already trees growing, the site is planted in crops, or the site has been converted to other uses.
    - It is not appropriate to promote trees where the site is currently native prairie, treeless wetland, or functional grassland.
- Adjacent Land Cover:
    - It may be appropriate to promote trees where the adjacent cover is forested, cropped, or converted to other uses.

    - It is not appropriate to promote trees where the adjacent cover is native prairie, treeless wetland, or functional grassland.
    - It is not appropriate to promote trees if the adjacent land is conservation land with a focus on open landscapes and grassland habitat.
- Size and Proximity to Other Forested Cover:
    - It may appropriate to promote trees where there are forests within one mile of the site, to allow forest wildlife to colonize the site. These sites can be relatively small (5-10 acres), especially if they are between two larger areas.
    - It is not appropriate to promote trees where there are not trees within one mile of the site, unless the planted area will be large enough (>25 acres) to become colonized and serve as a source for colonizing other areas.
- Tree Species:
    - Funding should be provided only for native species that are found in that landscape, and to local ecotypes. Preference should also be given to hard and soft mast-producing trees and shrubs, those that can provide thermal cover, and those that can rapidly provide roost trees and cavity-making capacity (Appendix D).
    - Shorter woody species may be more appropriate than taller species in some conservation plantings, such as pheasant winter cover.
    - Discourage planting non-native invasive woody species (e.g., Russian olive) and non-native species with little benefit for wildlife (Appendix D).
- Winter cover for wildlife.
    - It is more appropriate to complete winter cover projects for non-migratory birds like ring-neck pheasants that are suitable and appropriate. The DNR, Section of Wildlife directive outlines appropriate winter cover development (Appendix D).
    - It is less appropriate to plant trees for winter cover projects that are inadequate in size, are poorly placed or redundant to existing local winter cover such as large cattail sloughs.

Recommended Practices

We recommend all available practices and components for establishing, protecting and improving forest stands, including (but not limited to):

- 490 – Site Preparation
- 612 - Planting
- 666 – Forest Stand Improvement
- 338 – Prescribed Burning
- 394 – Firebreak
- 315 – Herbaceous Weed Control
- 314 – Brush Management
- 391 – Riparian Forest Buffers

- 647 – Early Successional Habitat Development and Management
- 655 – Forest Trails and Landings

Funding Recommendations

The Forestry Subcommittee recommends that the NRCS and SWCD develop an applicant ranking system that places preference on funding the recommended practices for those landowners who live within the identified forest restoration landscape and are willing to perform the forestry practices in accord with these site-level guidelines. We feel that ranking may be more effective at encouraging forest management than simply dedicating a portion of the available forestry funding to this ecoregion.

Furthermore, the Subcommittee recommends that NRCS and SWCD field staff be given training on this initiative, and are encouraged to seek out landowners in appropriate landscapes that are interested in performing forest management and restoration activities and practices.